Case Letter

A case of psoriasis erythroderma in a patient on hemodialysis successfully treated with ixekizumab

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Sir,

Psoriasis is associated with various comorbidities, including kidney disease. We herein report a case of severe psoriasis in a patient undergoing hemodialysis, which was successfully treated with a single injection of ixekizumab.

A 60-year-old male was referred to our department complaining of generalized scaly erythema on the face, trunk, and extremities. He had been diagnosed with psoriasis 10 years earlier, which had worsened several months before presentation. He had chronic kidney disease (nephrosclerosis), and had been receiving hemodialysis for 15 years. Physical examination showed a number of erythematous plaques with silvery scales on the face (Fig. 1a), and diffuse scaly erythema on the trunk (Fig. 1b). Nail psoriasis was also observed. Histopathological examination revealed regular acanthosis with focal parakeratosis, and perivascular mononuclear cell infiltration in the papillary dermis (Fig. 2). The patient's Psoriasis Area and Severity Index (PASI) score was 35.8. Treatment with subcutaneous ixekizumab was started at a loading dose of 160 mg, resulting in marked improvement 2 weeks later (Fig. 3). Because of pain during injection, treatment was switched to topical therapy. Thereafter, he stopped coming to our department.

Psoriasis is a systemic inflammatory disease with various comorbidities, and has a significantly increased risk of chronic kidney disease [1,2]. Th17 cell, which produce IL-17, are implicated in the pathogenesis of renal diseases [3], and high levels of IL-17 in psoriasis may induce renal inflammation, potentially leading to glomerulonephritis and other renal injury [4]. Moreover,

Figure 1: Diffuse scaly erythema on the face (a) and back (b).

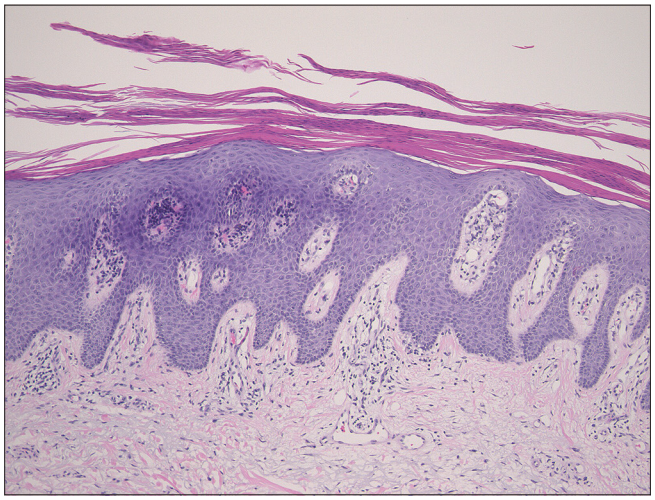

Figure 2: Histopathological features showing regular acanthosis with parakeratosis.

new-onset psoriasis in patients on hemodialysis has occasionally been reported. The patient in the present

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Figure 3: Marked improvement after single injection of ixekizumab.

case developed psoriasis after hemodialysis was introduced, and the disease gradually worsened despite topical corticosteroid therapy. Patients on hemodialysis have been reported to exhibit a Th1-biased cytokine profile, which may play a role in the induction of psoriasis.

To date, there have been several reports of severe psoriasis successfully treated with biologics in patients undergoing hemodialysis. Among the biologics used, secukinumab was the most frequently reported, and demonstrated a favorable safety profile. In contrast, reports of ixekizumab use in this setting remain limited [5,6].

Ixekizumab is a high-molecular-weight protein that does not cross the dialysis membrane. Consequently, it is not cleared by hemodialysis. Since ixekizumab is not eliminated via the kidneys, it poses a low risk of nephrotoxicity. Biologics with shorter half-lives are generally preferred for hemodialysis patients to minimize drug accumulation. Ixekizumab's half-life is approximately 14–18 days [7], which is shorter than secukinumab's half-life. This suggests a pharmacokinetic advantage for ixekizumab in patients on hemodialysis. In this case, a single dose of ixekizumab elicited a rapid clinical response. However, further studies are needed to confirm the long-term safety and efficacy of ixekizumab in patients undergoing dialysis.

Consent

The examination of the patient was conducted according to the principles of the Declaration of Helsinki.

The authors certify that they have obtained all appropriate patient consent forms, in which the patients gave their consent for images and other clinical information to be included in the journal. The patients understand that their names and initials will not be published and due effort will be made to conceal their identity, but that anonymity cannot be guaranteed.

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